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10/576,795

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EXAMINER

PHAM, TUAN

ART UNIT

PAPER NUMBER

2618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/576,795 | Applicant(s) SHIFF ET AL. | |
| | Examiner TUAN A. PHAM | Art Unit 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/25/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-11 and 13-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-11,22 and 24 is/are rejected.
- 7) ☒ Claim(s) 13-21,23 and 25-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/25/2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear how “internally installed antenna device” recited in lines 6 relates to “a respective antenna device” recited in lines 11-12? Are they the same?

Regarding claim 1, it is unclear how “interference antenna device” recited in lines 17-18 relates to “a respective antenna device” recited in lines 11-12 or “internally installed antenna device” recited in lines 6? Are they the same?

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-6, 8, 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sung-Joon Moon (WO 03/013025A1) in view of Lovinggood et al. (US Patent No.: 6,934,511, hereinafter, "Lovinggood") and further in view of Tomoe (US Patent No.: 6,970,680).**

Regarding claim 1, Sung-Joon Moon teaches an apparatus serving as an indoor communications wireless distribution system to communicate with wireless communications devices located within an internal space of a structure, the apparatus comprising (see figure 1, abstract):

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a radio base station or a repeater device comprising an external antenna and a bidirectional amplifier (see figure 1, abstract, antenna 1-11, 1-12, page 6);

at least one internally installed antenna device adapted to receive and transmit via the radio base station or repeater device (see figure 1, repeater 300, antenna 2-11, 2-12).

It should be noticed that Sung-Joon Moon fails to teach a central control unit interfacing between the radio base station or repeater and the antenna device. However, Lovinggood teaches a central control unit interfacing between the radio base station or repeater and the antenna device (see figure 5, it is obvious to move the controller 210 to a different location).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lovinggood into view of Sung-Joon Moon in order to easily replace the controller if the controller failing.

Sung-Joon Moon and Lovinggood, in combination, fails to teach central control unit for detecting and reducing interference within the wireless network; at least one antenna attenuation control unit coupled to a respective antenna device for interfacing between the respective antenna device and the central control unit, and for controlling the attenuation of the respective antenna device, wherein said central control unit is adapted to identify interference originating from the respective antenna device, and to instruct the coupled antenna attenuation control unit to attenuate transmissions from the interfering antenna device. However, Tomoe teaches central control unit for detecting and reducing interference within the wireless network (see figure 1, controller unit 22);

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at least one antenna attenuation control unit (see figure 1, in this case, the attenuation 32 can be integrated in the controller 22) coupled to a respective antenna device for interfacing between the respective antenna device and the central control unit (see figure 1, controller 22, attenuation 32, antenna 35); and for controlling the attenuation of the respective antenna device, wherein said central control unit is adapted to identify interference originating from the respective antenna device, and to instruct the coupled antenna attenuation control unit to attenuate transmissions from the interfering antenna device (see figure 1, controller 22 detect the interference wave having the same frequency as a transmitted signal, then the controller 22 controls the attenuator 32 to stop the power in transmission in order to temporarily stop the transmission of the radio signal by way of the transmitting antenna 35, col.12, ln.15-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Tomoe into view of Sung-Joon Moon and Lovinggood in order to reduce the interference for the system.

Regarding claim 2, Sung-Joon Moon further teaches the repeater device is a bi-directional amplifier mini-repeater (see figure 1, repeater 300).

Regarding claim 3, the combination of Sung-Joon Moon, Lovinggood and Tomoe disclosed the invention but does not disclose omni-directional antenna. However, the use of omni-directional antenna within a mobile device is well known and widely used in the Telecommunication field and the Examiner takes Official notice of such use of omni-directional antenna within a wireless device in order to receive better reception.

Regarding claim 4, Sung-Joon Moon further teaches an at least one repeater attached to the at least one antenna attenuation control unit for enhancing the broadcast of the at least one internally installed antenna associated with the at least one antenna attenuation control unit (see figure 1, repeater 300, attenuator 2₂₁, pages 6-8).

Regarding claim 5, Lovinggood further teaches the central control unit is adapted to detects the source antenna of the interference by sampling at least one uplink signal (see figure 5, interference canceller 208 detect interference of uplink signal).

Regarding claim 6, Tomoe further teaches the central control unit is adapted to commanding the at least one antenna attenuation control unit to attenuate the signal strength received from the associated antennas device (see figure 1, controller 22, attenuator 32, it is clearly seen that the controller detect the interference of each antenna and control the attenuator 32 based on the power level or signal strength for reduce the interference).

Regarding claim 8, Tomoe further teaches the central control unit is adapted to reduces or eliminates the interference by commanding the at least one antenna attenuation control unit to disconnect or lower the level of transmission of the associated at least one internally installed antenna device (see figure 1, controller 22 detect the interference wave having the same frequency as a transmitted signal, then the controller 22 controls the attenuator 32 to stop the power in transmission in order to temporarily stop the transmission of the radio signal by way of the transmitting antenna 35, col.12, ln.15-67).

Regarding claim 11, Tomoe further teaches the central control unit is adapted to issue at least one command signal to the at least one antenna attenuation control unit for disconnecting or attenuating the at least one internally installed antenna device (see figure 1, controller 22 detect the interference wave having the same frequency as a transmitted signal, then the controller 22 controls the attenuator 32 to stop the power in transmission in order to temporarily stop the transmission of the radio signal by way of the transmitting antenna 35, col.12, ln.15-67).

Regarding claim 22, Tomoe further teaches an interference detection unit for the detection of interferences in an uplink signal (see figure 1, col.12, ln.15-67).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung-Joon Moon (WO 03/013025A1) in view of Lovinggood et al. (US Patent No.: 6,934,511, hereinafter, "Lovinggood") and further in view of Tomoe (US Patent No.: 6,970,680) as applied to claim 1 above, and further in view of Stewart (US Patent No.: 4,878,729).

Regarding claim 9, Lovinggood teaches a coupler to identify the interference signal (see figure 13, coupler 572). Sung-Joon Moon, Lovinggood and Tomoe, in combination, fails to teach the central control unit includes a coupler device that is adapted to sample signals without interfering with the transferred signal, thereby identifying the blocking of the transmission frequencies or an interference signal that is not a wireless signal. However, Stewart teaches the central control unit includes a coupler device that is adapted to sample signals without interfering with the transferred

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signal, thereby identifying the blocking of the transmission frequencies or an interference signal that is not a wireless signal (see col.11, ln.5-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Stewart into view of Sung-Joon Moon, Lovinggood and Tomoe in order to reduce the interference for the system.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung-Joon Moon (WO 03/013025A1) in view of Lovinggood et al. (US Patent No.: 6,934,511, hereinafter, "Lovinggood") and further in view of Tomoe (US Patent No.: 6,970,680) as applied to claim 1 above, and further in view of Schulz et al. (US Pub. No.: 2002/0039415, hereinafter, "Schulz").

Regarding claim 10, Sung-Joon Moon, Lovinggood and Tomoe, in combination, fails to teach the central control unit is adapted to samples signals and identify non-wireless signals generating interference. However, Schulz teaches the central control unit is adapted to samples signals and identify non-wireless signals generating interference (see figure 1, noise level calculator 13, [0001]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Schulz into view of Sung-Joon Moon, Lovinggood and Tomoe in order to reduce the interference for the system.

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8. **Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung-Joon Moon (WO 03/013025A1) in view of Lovinggood et al. (US Patent No.: 6,934,511, hereinafter, "Lovinggood") and further in view of Tomoe (US Patent No.: 6,970,680) as applied to claim 1 above, and further in view of Smith (US Pub. No.: 2003/0021367).**

Regarding claim 24, Sung-Joon Moon, Lovinggood and Tomoe, in combination, fails to teach an intermediate frequency surface acoustic wave filter unit adapted to determine spectral energy distribution of a noise signal in a specific frequency band; at least one band width intermediate frequency band pass filter; and a multiplexer unit. However, Smith teaches an intermediate frequency surface acoustic wave filter unit adapted to determine spectral energy distribution of a noise signal in a specific frequency band; at least one band width intermediate frequency band pass filter; and a multiplexer unit (see figure 2a, [0056, 0058, 0181]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Smith into view of Sung-Joon Moon, Lovinggood and Tomoe in order to reduce the interference for the system.

Allowable Subject Matter

9. Claims 13-21, 23 and 25-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/TUAN A PHAM/

Primary Examiner, Art Unit 2618